

CLAIMS

The invention claimed is:

1. A system for configuring differentiated services (Diffserv) over multi-protocol label switching (MPLS) in a network that includes MPLS tunnels, comprising:
a policy server that is arranged to configure a customer policy and a mapping policy that maps between an experimental (EXP) field and a unique per-hop-behavior (PHB), and to deploy the mapping policy and the customer policy to interfaces of devices of the network that correspond to the tunnels.
2. The system of claim 1, wherein
the customer policy comprises a tunnel group identifier and tunneling mode.
3. The system of claim 1, wherein
the policy server translates the mapping policy into device specific commands,
and
deployment is performed by deploying commands to specific devices.
4. The system of claim 1, wherein
deployment is such that the interfaces associate with at least one of input roles, output roles and MPLS gateways of customer source and destination host groups.
5. An apparatus for configuring Diffserv over MPLS in a network, comprising:
a memory;
a service application residing on the memory,

wherein the service application is arranged to configure a customer policy that comprises a tunnel group and tunneling mode, the customer policy being arranged to have customer traffic mapped into MPLS tunnels, and

wherein the service application is arranged to configure an EXP-to-PHB mapping policy that is arranged to map EXP fields to PHB;

a central processing facility that is arranged to translate the customer policy and mapping policy into device-neutral policy parameters; and

a policy consumer that is arranged to translate the device-neutral policy parameters into device-specific commands, and that is further arranged to deploy the device-specific commands to policy targets, such that the customer policy and mapping policy are implemented across at least a portion of the network.

6. The apparatus of claim 5, further comprising:

a user interface that is arranged to receive the customer policy and the mapping policy.

7. The apparatus of claim 5, wherein

deployment is such that the interfaces associate with at least one of input roles, output roles and MPLS gateways of customer source and destination host groups.

8. The apparatus of claim 5, wherein

the policy consumer is further arranged to attach the customer policy to the corresponding MPLS tunnels and deploy the customer policy to interfaces of the attached MPLS tunnels.

9. The apparatus of claim 5, further comprising:

a database for storing the device-neutral policy parameters.

10. The apparatus of claim 5, wherein
- the service application comprises a tunnel group object that is arranged to create the MPLS tunnels by specifying end-point routers and inter-connecting topology.
11. An apparatus for configuring Diffserv over MPLS in a network, comprising:
- a means for defining a mapping policy that maps between an EXP field and a unique PHB;
 - a means for maintaining a customer policy;
 - a means for translating the mapping policy and customer policy into device-specific commands; and
 - a means for deploying the device-specific commands to policy targets.
12. The apparatus of claim 11, wherein
- the customer policy includes information about a tunnel group identifier and a tunnel mode.
13. The apparatus of claim 11, wherein
- deployment is such that the interfaces associate with at least one of input roles, output roles and MPLS gateways of customer source and destination host groups.
14. An article comprising: a storage medium, the storage medium having instructions stored thereon, wherein when the instructions are executed by at least one device, they result in:
- defining a mapping policy configured to map between an EXP field and a unique PHB;
 - defining a customer policy that is configured to govern the treatment of individual customer traffic;

defining a network policy that is configured to define the Diffserv treatment of aggregated traffic;

translating the mapping policy, the network policy and the customer policy into device-specific commands; and

deploying the device-specific commands to policy targets.

15. The article of claim 14, wherein executing the instructions further results in:
generating device neutral information associated with the mapping policy, the network policy and the customer policy.
16. The article of claim 15, wherein
the device specific commands are generated from the device neutral information.
17. The article of claim 15, wherein executing the instructions further results in:
storing the device neutral information in a database.
18. The article of claim 14, wherein
deployment is such that the interfaces associate with at least one of input roles, output roles and MPLS gateways of customer source and destination host groups.
19. The article of claim 14, wherein
deploying the mapping policy to the network interfaces further comprises issuing new commands to reconfigure a router based on the mapping policy.
20. The article of claim 14, wherein
the customer policy includes information about a tunnel group identifier and a tunnel mode.

21. A method for configuring Diffserv over MPLS in a network, comprising:
- defining a mapping policy configured to map between an EXP field and a unique PHB;
 - defining a customer policy that is configured to govern the treatment of individual customer traffic;
 - defining a network policy that is configured to define the Diffserv treatment of aggregated traffic;
 - translating the mapping policy, the network policy and the customer policy into device-specific commands; and
 - deploying the device-specific commands to policy targets.
22. The method of claim 21, further comprising:
- generating device neutral information associated with the mapping policy, the network policy and the customer policy.
23. The method of claim 22, wherein
- the device specific commands are generated from the device neutral information.
24. The method of claim 22, further comprising:
- storing the device neutral information in a database.
25. The method of claim 21, wherein
- deployment is such that the interfaces associate with at least one of input roles, output roles and MPLS gateways of customer source and destination host groups.
26. The method of claim 21, wherein

deploying the mapping policy to the network interfaces further comprises issuing new commands to reconfigure a router based on the mapping policy.

27. The method of claim 21 wherein
the customer policy includes information about a tunnel group identifier and a tunnel mode.